



**U.S. Army Medical Materiel Agency  
(USAMMA)/Distribution Operations Center  
(DOC)**

**Packing Protocols for  
Temperature Sensitive  
Medical Products requiring  
Storage and Transportation  
Temperatures between  
2°C - 8°C (36°F - 46°F).**

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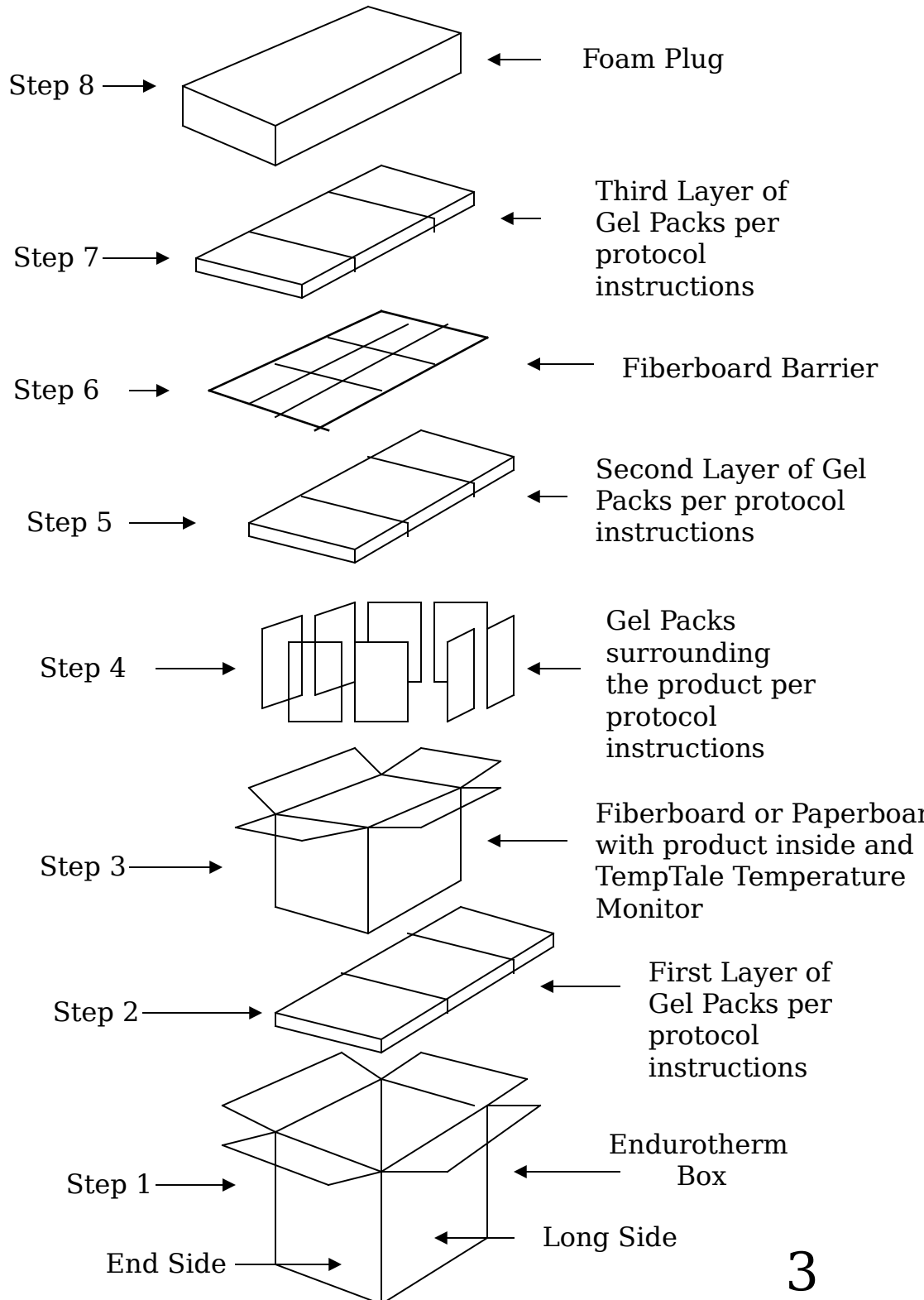
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# Endurotherm (ISC) Box Packing Steps

The packing or layering of the Endurotherm boxes is the same in principle for all three sizes (large, medium and small).



## **Cold Weather Packing Protocol**

- Cold Weather Configuration is used when the ambient temperature at the **receiving site** is consistently below 55° F.
- Protocols are designed to keep temperature sensitive products requiring refrigeration temperatures between 2° C to 8° C within these temperature ranges during transportation, for up to 72 hours.
- 48 oz. and 24 oz. gel packs are used in all boxes for layering and void space filler.
- Coolant material must be placed in layers according to attached diagrams. Cold Weather configurations only use refrigerated gel packs. (See cold weather packing configuration diagrams.)

# **Cold Weather Packing Protocol Procedures**

**The Cold Weather Packing Protocol is used whenever the ambient or outside temperature at the receiving site consistently remains below 55 degrees Fahrenheit. Begin the Cold Weather packing protocol by:**

- o Placing a layer of refrigerated gel packs at the bottom of the box.
- o Next item will be the product.
- o Place gel packs around the product's side(s) to fill in gap between product and the insulated walls of the box.
- o This is followed by placing an activated TempTale electronic temperature monitor on top of the product, activate the TempTale temperature monitor by pressing and releasing the "start" button. Once the button is released, a "sunshine" icon will appear in the upper left corner of the LCD. This indicates that the monitor is running. Peel off the tape in the back of the TempTale and place it centered on top of the product.
- o Follow with another layer of refrigerated gel packs.
- o Above the second layer of refrigerated gel packs insert a fiberboard barrier.
- o Add a final layer of refrigerated gel packs above the fiberboard barrier.
- o Finally, insert the foam plug to seal the contents of the box.

## **Notes:**

- o Follow procedures according to each protocol diagram of ISC box used.
- o To chill large amounts of gel packs at once, place gel pack boxes inside a refrigerator that has been set to 4° C for at least 30 days prior to use.

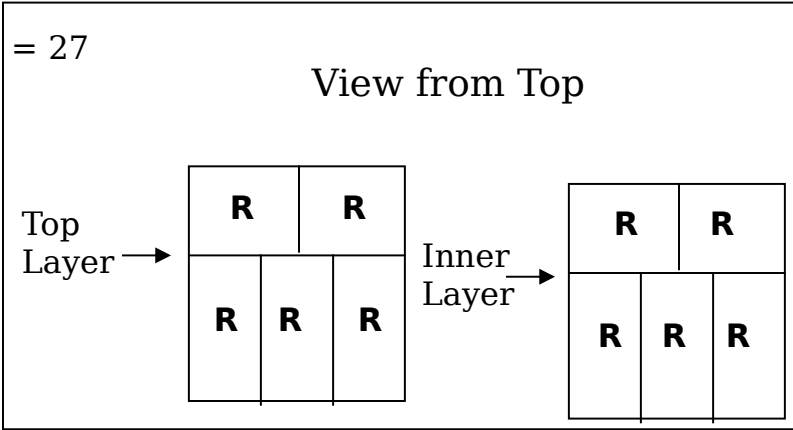
# Extra Large (ISC Box, E-327) - Cold Weather Packing Protocol Diagrams

**Total amount of chilled Gel Packs = 27**

**Approximate Weight:**

Max load = 145 lbs

Min load = 120 lbs



## Layer 3:

5 Large Refrigerated Gel Packs (48 oz. each)

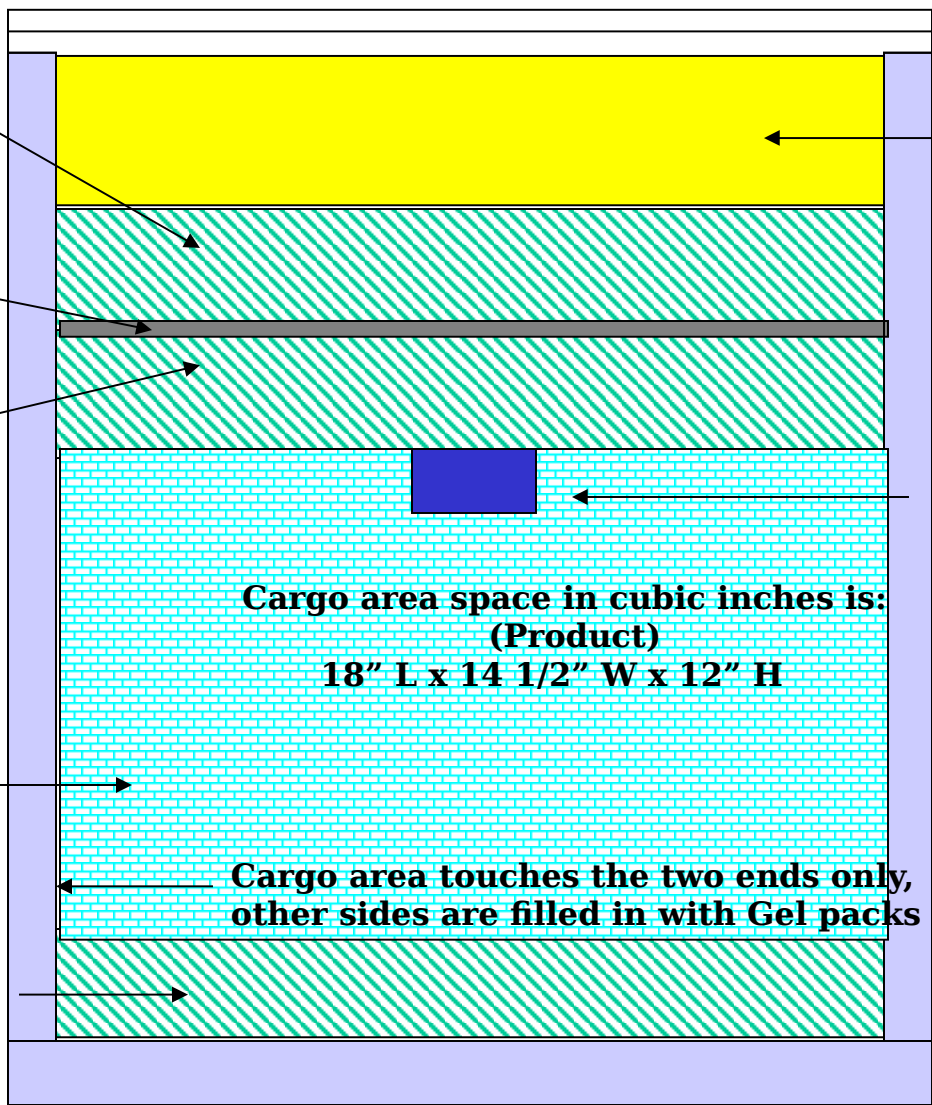
Fiberboard Barrier

## Layer 2:

5 Large Refrigerated Gel Packs (48 oz. each)

Use a total of 12 Large Refrigerated Gel Packs (6 on each long side 48 oz. Each)

**Layer 1:** 5 Large Refrigerated Gel Packs (48 oz. each)



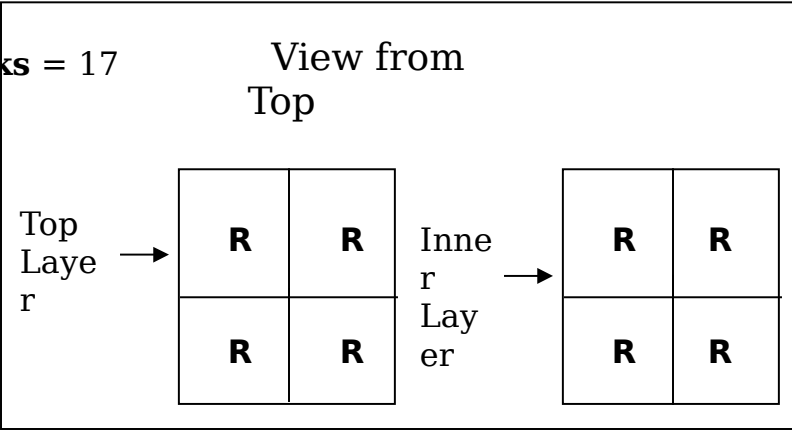
Foam Plug

Temperature Monitor

Side View

# Large (ISC Box, E-186) - Cold Weather Packing Protocol Diagrams

**Total amount of chilled Gel Packs = 17**  
**Approximate Weight:**  
 Max load = 75 lbs  
 Min load = 50 lbs



## Layer 3:

4 Large Refrigerated Gel Packs (48 oz. each)

Fiberboard Barrier

Foam Plug

Temperature Monitor

**Layer 2:** 4 Large Refrigerated Gel Packs (48 oz. each)

**Cargo area space in cubic inches is:**

**(Product)**

**16 1/2" L x 12" W x**

**7" H**

**Cargo area touches one end and one long side only, other sides are filled in with Gel packs.**

Use a total of 5 Large Refrigerated Gel Packs (2 in one end and 3 in one long side 48 oz each)

**Layer 1:** 4 Large Refrigerated Gel Packs (48 oz. each)

Side View

# Medium (ISC Box, E-65) - Cold Weather Packing Protocol Diagrams

**Total amount of chilled Gel Packs = 13**

**Approximate Weight:**

Max load = 40 lbs

Min load = 30 lbs

View from Top

Top  
Layer →



Inner  
Layer →



## Layer 3:

3 Medium  
Refrigerated  
Gel Packs (24  
oz. each)

Fiberboard  
Barrier

Foam  
Plug

Temperatu  
re Monitor

## Layer 2:

3 Medium  
Refrigerated  
Gel Packs (24  
oz. each)

**Cargo area space in cubic inches is:  
(Product)**

**12" L x 6 1/2" W x 6 1/2" H**

Use a total of  
4 Medium  
Gel Packs (2  
in one long  
side and 2 in  
one end 24  
oz. each)

**Cargo area touches one end and one long side only,  
other sides are filled in with Gel Packs.**

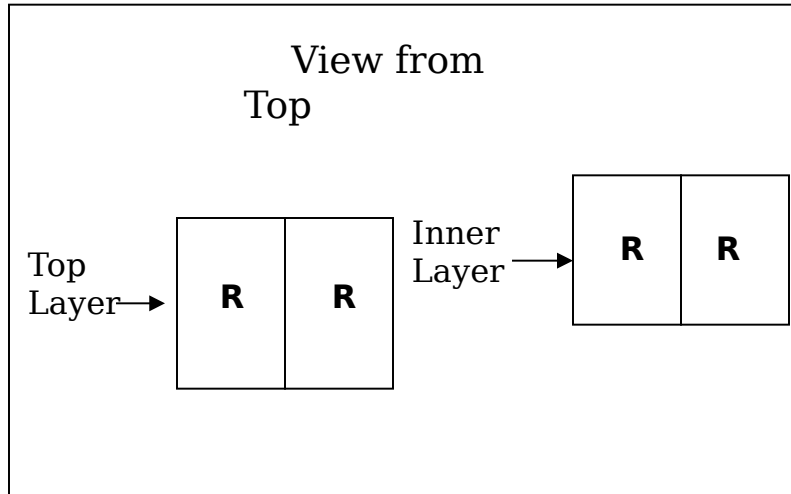
## Layer 1:

3 Medium  
Refrigerated  
Gel Packs (24  
oz. each)

Side  
View



# Small (ISC Box E-36-2) - Cold Weather Packing Protocol Diagrams



**Total amount of chilled Gel Packs = 8**

**Approximate Weight:**

Max load = 20 lbs

Min load = 15 lbs

## Layer 3:

2 Medium Refrigerated Gel Packs (24 oz. each)

Fiberboard Barrier

## Layer 2:

2 Medium Refrigerated Gel Packs (24 oz. each)

## Layer 1:

2 Medium Refrigerated Gel Packs (24 oz. each)

Foam Plug

Temperature Monitor

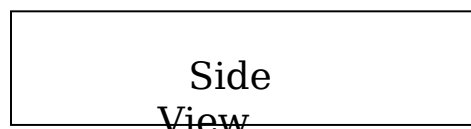
2 Medium Refrigerated Gel Packs in one long side only (24 oz each).

**Cargo area space in cubic inches is:**

**(Product)**

**10 3/4" L x 6 1/2" W x 4" H**

**Cargo area touches the two ends and one long side only, other side is filled in with Gel Packs.**



# Moderate Weather Packing Protocol

- Moderate Weather Configuration is used when the ambient temperature **at the receiving site** is between 55° F and 77° F.
- Protocols are designed to keep temperature sensitive products requiring refrigeration temperatures between 2° C to 8° C within these temperature ranges during transportation, for up to 72 hours.
- 48 oz. and 24 oz. gel packs are used in all boxes for layering and fill in.
- Coolant material must be placed in layers according to attached diagrams. **Frozen gel packs are always farthest away from vaccine.**

# Moderate Weather Packing Protocol Procedures

**The Moderate Weather Packing Protocol is used whenever the ambient or outside temperature at the receiving site is between 55 degrees Fahrenheit and 77 degrees Fahrenheit. Begin the Moderate Weather packing protocol by:**

- o Placing a layer of refrigerated gel packs at the bottom of the box.
- o Next item will be the product.
- o Place gel packs around the product's side(s) to fill in gap between product and the insulated walls of the box.
- o This is followed by placing an activated TempTale electronic temperature monitor on top of the product, activate the TempTale temperature monitor by pressing and releasing the "start" button. Once the button is released, a "sunshine" icon will appear in the upper left corner of the LCD. This indicates that the monitor is running. Peel off the tape in the back of the TempTale and place it centered on top of the product.
- o Follow with another layer of refrigerated gel packs.
- o Above the second layer of refrigerated gel packs insert a fiberboard barrier.
- o Add a final layer of a combination of refrigerated and frozen gel packs above the fiberboard barrier.
- o Finally, insert the foam plug to seal the contents of the box.

## **Notes:**

- o Follow procedures according to each protocol diagram of ISC box used.
- o To chill large amounts of gel packs at once, place gel pack boxes inside a refrigerator that has been set to 4° C for at least 30 days prior to

# Extra Large (ISC Box, E-327)- Moderate Weather Packing Protocols Diagrams

## Total amount of Gel Packs:

Chilled = 26

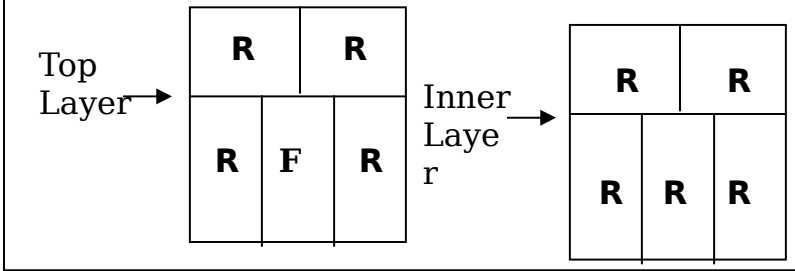
Frozen = 1

## Approximate Weight:

Max load = 145 lbs

Min load = 120 lbs

View from Top



### Layer 3: 1

Large Frozen & 4 Large Refrigerated Gel Packs (48 oz. each)

Fiberboard Barrier

### Layer 2: 5

Large Refrigerated Gel Packs (48 oz. each)

Use a total of 12 Large Refrigerated Gel Packs (6 on each long side 48 oz. Each)

### Layer 1: 5

Large Refrigerated Gel Packs (48 oz. each)

Foam Plug

Temperature Monitor

Cargo area space in cubic inches is:  
(Product)

18" L x 14 1/2" W x 12" H

Cargo area touches one end only,  
other sides are filled in with Gel packs .

Side View

# Large (ISC Box, E-186) - Moderate Weather

## Packing Protocols

## Diagrams

### Total amount of Gel Packs:

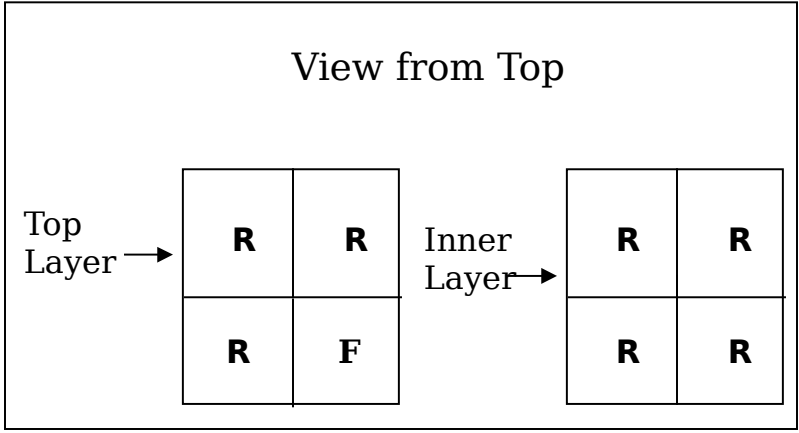
Chilled = 16

Frozen = 1

### Approximate Weight:

Max load = 75 lbs

Min load = 50 lbs



### Layer 3: 1

Large Frozen Gel Pack & 3 Large Refrigerated Gel Packs (48 oz. each)

Fiberboard Barrier

### Layer 2: 4

Large Refrigerated Gel Packs (48 oz. each)

### Layer 1: 4

Large Refrigerated Gel Packs (48 oz. each)

Foam Plug

Temperature Monitor

Use a total of 5 Large Refrigerated Gel Packs (2 in one end and 3 in one long side 48 oz each)

**Cargo area space in cubic inches is:**  
**(Product)**  
**16 1/2" L x 12" W x 7" H**

**Cargo area touches one end and one long side only, other sides are filled in with Gel packs.**

Side View

# Medium (ISC Box, E-65) - Moderate Weather Packing Protocols Diagrams

**Total amount of Gel Packs = 13**

Chilled = 12

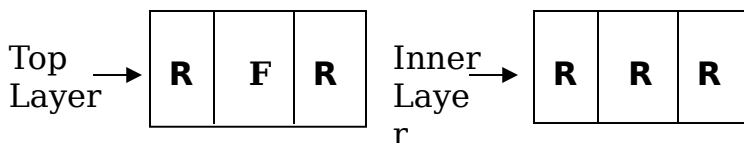
Frozen = 1

**Approximate Weight:**

Max load = 40 lbs

Min load = 30 lbs

View from Top



## Layer 3:

1 Medium Frozen Gel Pack & 2 Medium Refrigerated Gel Packs (24 oz. each)

Fiberboard Barrier

## Layer 2:

3 Medium Refrigerated Gel Packs (24 oz. each)

**Layer 1:** 3 Medium Refrigerated Gel Packs (24 oz. each)

Foam Plug

Temperature Monitor

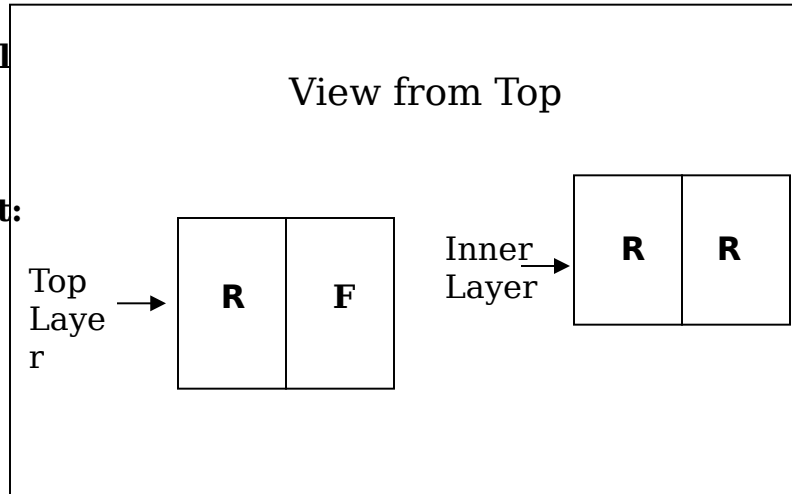
Use a total of 4 Medium Gel Packs (2 in one long side and 2 in one end 24 oz. each)

**Cargo area space in cubic inches is (Product)**  
**12"L x 6 1/2" W x 6 1/2" H**

**Cargo area touches one end and one long side only, other sides are filled in with Gel Packs!**

Side View

# Small (ISC Box E-36-2) - Moderate Weather Packing Protocols Diagrams



**Total amount of Gel Packs = 8**

Chilled = 7

Frozen = 1

**Approximate Weight:**

Max load = 20 lbs

Min load = 15 lbs

## Layer 3:

1 Medium Frozen Gel Pack & 1 Medium Refrigerated Gel Pack (24 oz. each)

Fiberboard Barrier

## Layer 2:

2 Medium Refrigerated Gel Packs (24 oz. each)

## Layer 1:

2 Medium Refrigerated Gel Packs (24 oz. each)

Foam Plug

Temperature Monitor

**Cargo area space in cubic inches is:**

**(Product)**

**10 3/4" L x 6 1/2" W x 4" H**

**Cargo area touches the two ends and one long side only, other side is filled in with Gel Packs.**

2 Medium Refrigerated Gel Packs in one long side only (24 oz each).

Side View

# Warm Weather Packing Protocol

- Warm Weather Configuration is used when the ambient temperature **at the receiving site** is consistently above 77° F.
- Protocols are designed to keep temperature sensitive products requiring refrigeration temperatures between 2° C to 8° C within these temperature ranges during transportation, for up to 72 hours.
- 48 oz. and 24 oz. gel packs are used in all boxes for layering and fill in.
- Coolant material must be placed in layers according to diagrams. **Frozen packs are always farthest away from vaccine.**



# Warm Weather Packing Protocol Procedures

**The Warm Weather Packing Protocol is used whenever the ambient or outside temperature at the receiving site is consistently above 77 degrees Fahrenheit. Begin the Warm Weather packing protocol by:**

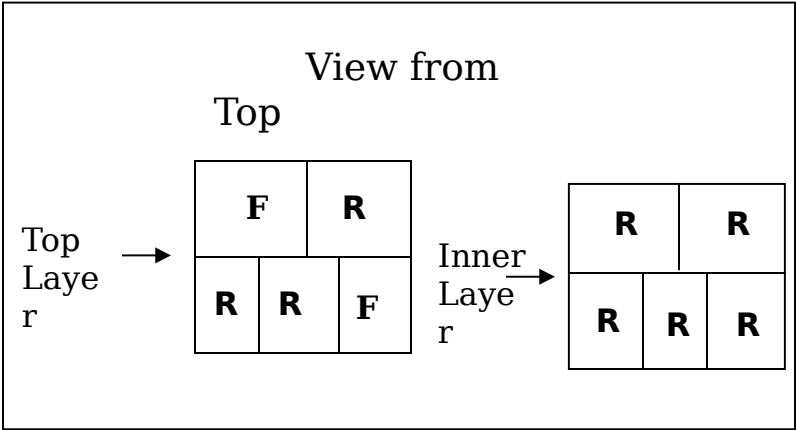
- o Placing a layer of refrigerated gel packs at the bottom of the box.
- o Next item will be the product.
- o Place gel packs around the product's side(s) to fill in gap between product and the insulated walls of the box.
- o This is followed by placing an activated TempTale electronic temperature monitor on top of the product, activate the TempTale temperature monitor by pressing and releasing the "start" button. Once the button is released, a "sunshine" icon will appear in the upper left corner of the LCD. This indicates that the monitor is running. Peel off the tape in the back of the TempTale and place it centered on top of the product.
- o Follow with another layer(s) of refrigerated gel packs.
- o Above the second layer of refrigerated gel packs insert a fiberboard barrier.
- o Add a final layer of a combination of refrigerated and frozen gel packs above the fiberboard barrier.
- o Finally, insert the foam plug to seal the contents of the box.

## **Notes:**

- o Follow procedures according to each protocol diagram of ISC box used.
- o To chill large amounts of gel packs at once, place gel pack boxes inside a refrigerator that has been set to 4° C for at least 30 days prior to use
- o To quickly chill small amounts of gel packs, place them in a single layer inside a

# Large (ISC Box, E-327) - Warm Weather Packing Protocol Diagrams

**Total amount of Gel Packs = 27**  
 Chilled = 25  
 Frozen = 2  
**Approximate Weight:**  
 Max load = 145 lbs  
 Min load = 120 lbs



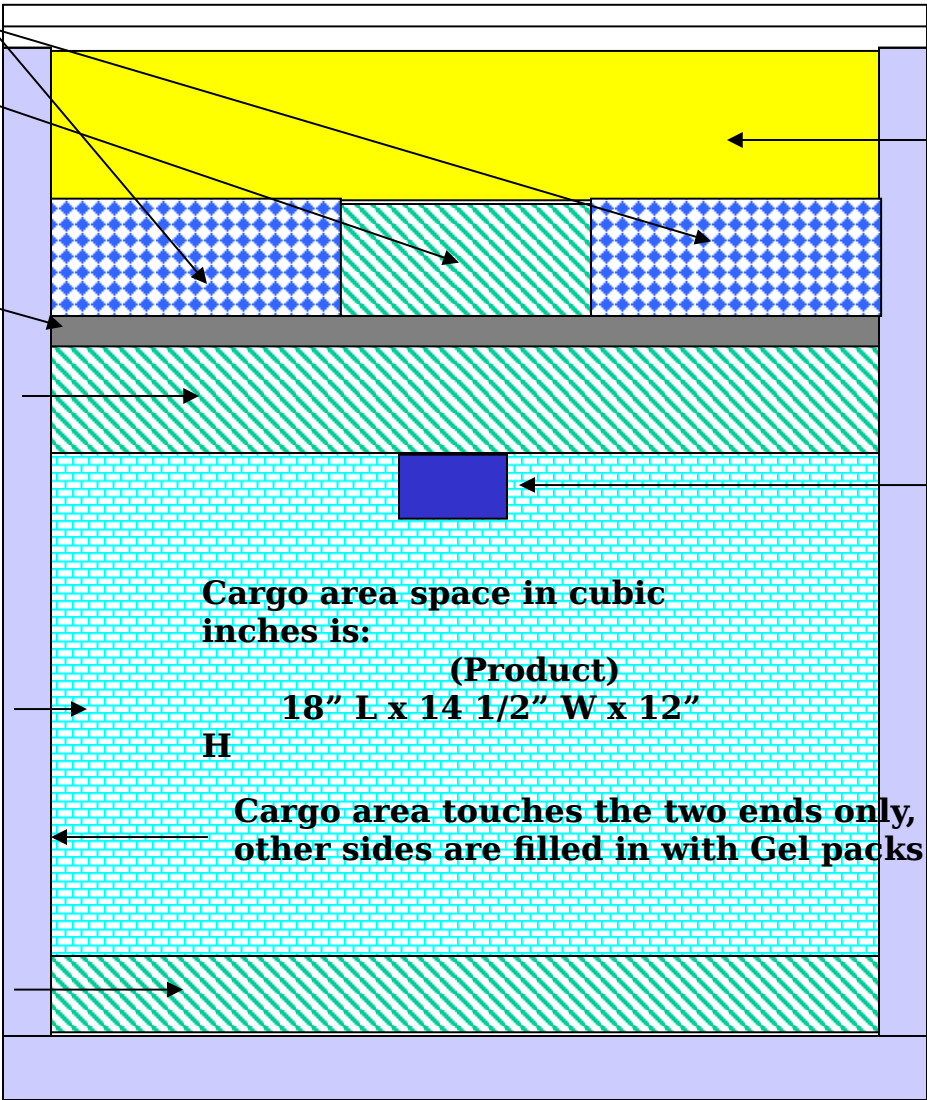
## Layer 3:

2 Large Frozen & 3 Large Refrigerated Gel Packs (48 oz. each)  
 Fiberboard Barrier

**Layer 2:** 5 Large Refrigerated Gel Packs (48 oz. each)

Use a total of 12 Large Refrigerated Gel Packs (6 on each long side 48 oz. Each)

**Layer 1:** 5 Large Refrigerated Gel Packs (48 oz. each)



# Large (ISC Box, E-186) - Warm Weather Packing

## Color Diagrams

### Total amount of Gel Packs:

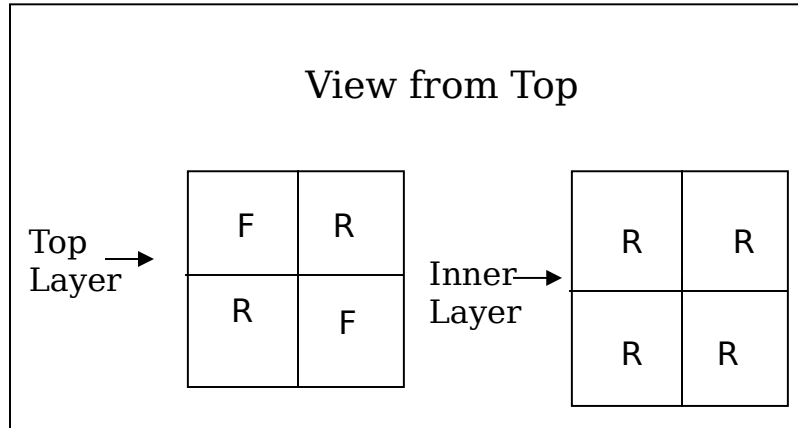
Chilled = 15

Frozen = 2

### Approximate Weight:

Max load = 75 lbs

Min load = 50 lbs



### Layer 3:

2 Large Frozen  
Gel Packs &

2 Large  
Refrigerated

Gel Packs (48  
oz. each)

Fiberboard  
Barrier

Foam  
Plug

### Layer 2:

4  
Large  
Refrigerated  
Gel Packs (48  
oz. each)

Temperatu  
re Monitor

**Cargo area space in cubic inches is:**  
**(Product)**  
**16 ½" L x 12" W x 7" H**

Use a total of  
5 Large  
Refrigerated  
Gel Packs (2  
in one end  
and 3 in one  
long side only  
48 oz each)

**Cargo area touches one end and one long side only  
other sides are filled in with Gel packs.**

### Layer 1:

4  
Large  
Refrigerated  
Gel Packs (48  
oz. each)

Side View

# Medium (ISC Box, E-65) - Warm Weather Packing Protocol Diagrams

**Total amount of Gel Packs = 13**

Chilled = 11

Frozen = 2

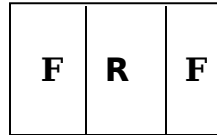
**Approximate Weight:**

Max load = 40 lbs

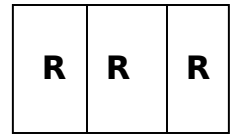
Min load = 30 lbs

View from Top

Top  
Layer



Inner  
Layer



**Layer 3: 2**

Medium  
Frozen Gel  
Packs &

1 Medium  
Refrigerated  
Gel Pack (24  
oz. each)

Fiberboard  
Barrier

**Layer 2:**

3 Medium  
Refrigerated  
Gel Packs (24  
oz. each)

**Layer 1:**

3 Medium  
Refrigerated  
Gel Packs (24  
oz. each)

Foam  
Plug

Temperatu  
re Monitor

**Cargo area space in cubic inches is  
(Product)  
12"L x 6 1/2" W x 6 1/2"H**

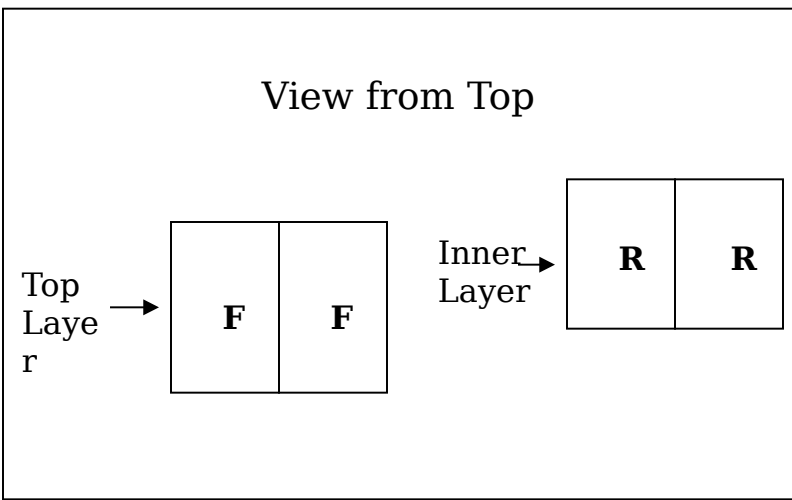
**Cargo area touches one end and one long side only, other sides are filled in with Gel Packs.**

Use a total of  
4 Medium  
Gel Packs (2  
in one long  
side and 2 in  
one end 24  
oz. each)

Side View

# Small (ISC Box E-36-2) - Warm Weather Packing Protocol Diagrams

**Total amount of Gel Packs = 8**  
 Chilled = 6  
 Frozen = 2  
**Approximate Weight:**  
 Max load = 20 lbs  
 Min load = 15 lbs



**Layer 3:**

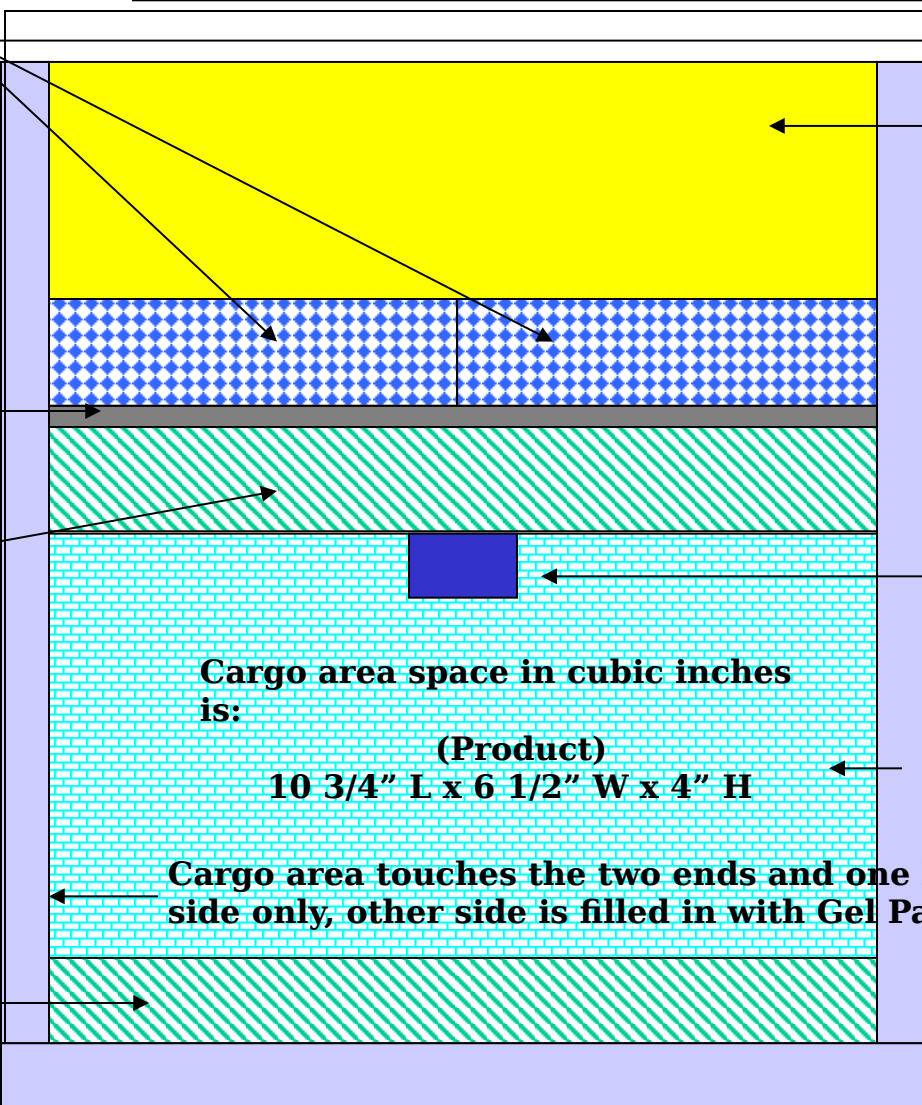
2 Medium Frozen Gel Packs (24 oz. each)

Fiberboard  
 Cardboard Barrier  
**Layer 2:**

2 Medium Refrigerated Gel Packs (24 oz. each)

**Layer 1:**

2 Medium Refrigerated Gel Packs (24 oz. each)



Foam Plug

Temperature Monitor

2 Medium Refrigerated Gel Packs in one long side only (24 oz each).

**Cargo area space in cubic inches is:**  
**(Product)**  
**10 3/4" L x 6 1/2" W x 4" H**

**Cargo area touches the two ends and one long side only, other side is filled in with Gel Packs.**